

State of Michigan, Department of Community Health (DCH) Vision and Values Excellence, Inclusion, Integrity, Teamwork and Compassion

Frances Pouch Downes, Dr. P.H. Laboratory Director

The State of Michigan, led by Governor Jennifer Granholm, recently launched the Vision and Values Project. In the Department of Community Health, more than 4,100 employees participated in 92 sessions during the fall of 2003. The shared values are: Excellence, Integrity, Inclusion and Teamwork. A fifth value, unique to MDCH, is Compassion.

Michigan is facing another fiscal year of funding cuts and spending restrictions. We are all challenged to do more work with fewer resources. Embracing these values facilitates cost savings along with reminding us that our customer is the priority. As Governor Granholm promotes the values and we discuss their similarity with our personal values, employees can move to a greater understanding of the alignment between their values and the work we do everyday. Working within the same value structure and system as other state employees increases understanding of goals, outcome and communication. We support the values at the Bureau of Laboratories (BOL) and have identified several initiatives that support these values, as follows:

Excellence is not just about getting it done, but getting it done in a way that we are proud of, and that impresses Michigan's citizens. BOL is renewing our commitment to providing the best possible technical services, ensuring the safety of our employees, and exploring innovative ways to meet program and client needs in a fiscally prudent manner.

Inclusion is reaching out to both citizens and state employees so they can be represented and involved in the important decisions that impact their lives. BOL was a pilot site for the National Laboratory System. We also recently joined the CDC-supported Clinical and Public Health Laboratory Integration Initiative to develop a seamless system of laboratory services in the state that meets public health goals. Finally, an advisory group has been convened to solicit feedback and input from our clients.

Integrity is honesty and more. We say what we will do and do what we say. BOL has developed quality assurance

standards for turnaround time. We will meet these standards and monitor our success. When failures to meet objectives are found, we will remove the barriers in order to achieve and surpass customer expectations.

Teamwork means focusing on what can do together, sharing information, resources and energy to achieve our vision for Michigan. Many of our employees identified internal and external communications as an area of needed improvement. We agree to: compliment each other and ourselves; rejoice in jobs well done, acknowledging all those contributed to the success; give the credit where it is due; and look for more ways and opportunities to communicate openly and honestly.

Our Continuous Quality Improvement Committee gathers broad input for technical and managerial enhancements for the bureau. Employees are encouraged to join or bring issues to the attention of the committee.

Compassion is seeking to understand the needs of our customers and helping to improve quality of life. The bureau embraces the concept that every specimen we test represents a life, a family, and a future. We will perform our duties as if each specimen we receive is from our own children, parents, friends, or homes. We will get better acquainted with each other and our clients so that we can understand their priorities and needs.

A number of emerging public health issues, such as the West Nile epidemic, new information system implementation, adding tandem mass spec testing, and bioterrorism response planning have challenged staff to respond quickly, while also trying to engage in future planning. As the Michigan Department of Community Health develops the Vision and Values Implementation Plan, there is a great deal we, in the Bureau of Laboratories, can contribute to working with a shared vision and living the shared values.

Bioterrorism Preparedness Initiatives and New Funding Made Available to Hospital Laboratories

Valerie Reed, RM(ASM), M(ASCP)
Bioterrorism Preparedness Program

Michigan is in the second year of participation in the Department of Health and Human Services, Health Resources Services Administration (HRSA) Cooperative Agreement - Bioterrorism Hospital Preparedness Program. HRSA has recognized the need to enhance laboratory capacity throughout the United States to diagnose and report on biological and chemical agents. The coordination of hospital laboratories and public health departments is essential in ensuring optimal capacity to detect and respond to terrorism, infectious disease outbreaks, and other public health emergencies.

In recognition of efforts to enhance laboratory capacity, a portion of the HRSA Cooperative Agreement funds has been designated directly for hospital laboratories statewide. To qualify for these funds, specific activities need to be addressed, but the mechanism to address these activities can, and should be, tailored to meet each hospital's identified needs. **It should be noted that this is a one-time funding opportunity.** MDCH is committed to assisting hospitals in enhancing the overall preparedness in Michigan. The intent of these awards to hospital laboratories is to support the necessary emergency preparedness laboratory initiatives, provide minimal safety engineering controls and to assist in education and training activities related to the collection and transportation of clinical biological and chemical terrorism specimens.

Collaboratively, in an effort to assist Sentinel Laboratories to focus on priority activities, MDCH BOL has developed a **Sentinel Laboratory Preparedness Program** to recognize your commitment to preparedness and your competence to identify potential bioterrorism agents and respond appropriately. Sentinel Labs who fulfill minimal requirements will be awarded a certificate to display in their laboratory in recognition of their commitment to the health and safety of the public in Michigan.

MDCH BOL is extremely please to work with laboratories throughout Michigan on these exciting initiatives. Please contact Val Reed at (517) 335-9653 or ReedV@Michigan.gov for more information about the Sentinel Laboratory Preparedness Program.

BOL Assures Safety with Biological Safety Cabinets

Patricia Somsel, Dr. P.H.
Division of Infectious Diseases

In 2000, the Michigan Department of Community Health Bureau of Laboratories (BOL) lost a valued employee in a tragic incident. A veteran of over 20 years in the microbiology laboratory working with an isolate of *Neisseria meningitidis* acquired a fatal infection with the organism by means not ever identified. The ensuing investigation by CDC of laboratory-acquired meningococcal infections established this agent as a significant occupational hazard to clinical microbiologists, with an attack rate 65 times that of the general population of comparable age (13/100,000 laboratorians vs. 0.2/100,000 in adults aged 30-59 in the United States).

Neisseria meningitidis was previously classified as a level 2 (BSL 2) organism, requiring biological safety cabinet (BSC) use only for operations likely to generate aerosols. This investigation, while identifying no specific activity that put laboratorians at risk, suggested that routine manipulations of the organism performed on the open bench, resulting in exposure to droplets or aerosol, could result in an increased risk for disease. Manipulation of isolates of *N. meningitidis* in a BSC provides additional protection against infection.

In a 2002 survey of the clinical laboratories of Michigan, BOL discovered that there was no BSC in 13% of Michigan laboratories reporting that they were practicing full-service microbiology. It is in these testing settings that there is the greatest concern for occupational exposure to *N. meningitidis* and other microorganisms. Recognizing the essential role clinical microbiologists play in the detection of emerging infectious diseases, including agents of bioterrorism, it was proposed that part of the Health Resources Services Administration (HRSA) federal bioterrorism grant funds be utilized to provide this basic minimal engineering protection.

Currently, BOL is assisting in the purchase and placement of BSCs in Michigan hospital laboratories lacking one. Despite the sadness recalling the loss of a colleague, it is satisfying to be able to use these funds to assure the safety of an unheralded state asset, the clinical microbiologist.

New Emerging Infectious Diseases Web Site

Patty Clark, MPH
Viral Serology/Viral Isolation Unit

A new web site on Emerging Infectious Diseases has been created through a successful interagency effort between State of Michigan Departments of Natural Resources, Agriculture, and Community Health, in conjunction with the United States Department of Agriculture and Michigan State University. This site was developed to create a comprehensive, easy to use portal of information on newly emerging, re-emerging, or diseases of concern in Michigan and the United States. Diseases currently on the site include West Nile virus, bovine tuberculosis, chronic wasting disease, rabies, and Lyme disease. Other diseases to watch for include avian influenza, monkeypox, and SARS.

Each disease has a section that includes basic information on diagnosis, transmission, clinical signs and pathology, and treatment and control. Each section also has information on human health issues, wildlife issues, pet issues, links to surveillance data in the form of testing tables and maps, links to pertinent laws and regulations, and a library where archived press releases can be found. The site also provides contact information for Michigan local health departments, wildlife offices, regional Michigan Department of Agriculture offices, and animal control offices.

The site can be found at:
www.michigan.gov/emergingdiseases

Congratulations!!

The MDCH Bureau of Laboratories is delighted to share the success of Hema Kapoor, MD, manager of the virology section. Dr. Kapoor has been nominated for the prestigious Charles C. Shepard Science Award.

Since 1985, the Centers for Disease Control and Prevention (CDC) and the Agency for Toxic Substances and Disease Registry (ASTDR) has presented the Shepard Award to recognize scientific achievement and the contribution of authors to the mission of CDC/ASTDR. This award is presented each year to authors of the most outstanding peer-reviewed research paper published by CDC/ASTDR. Dr. Kapoor has been nominated, along with her co-authors, in

the category Assessment and Epidemiology for the manuscript "Transmission of West Nile Virus through Blood Transfusion in the United States in 2002."

Dr. Kapoor has provided scientific guidance to the virology section since September 2002, arriving in Michigan as West Nile virus was reaching its peak. Since then she has worked through smallpox and SARS preparations with colleagues in the BOL to provide for potential testing needs of the citizens of Michigan, while maintaining business as usual.

Congratulations also go to Martha Boehme, MT(ASCP) of the Division of Infectious Diseases for her recent appointment as an Adjunct Assistant Instructor in the Medical Technology Program at Michigan State University. The adjunct faculty plays an important role in the student's education by their involvement in clinical rotation or by contributing expertise to lectures delivered on campus. Boehme's appointment will be from March 1, 2004 until June 30, 2007.

National Laboratory Training Network (NLTN) Workshop in a Box Now Available

If your facility has few available options for expanding or upgrading skills, consider distance-learning modules for meeting the training needs of your personnel. All that is needed for a NLTN Workshop in a box are students, a facilitator, audiovisual equipment, a copy machine and the time for an in-service. Each module costs \$50 to borrow and includes CEUs for the students.

Topics available are Packaging and Shipping Diagnostic Specimen and Infectious Substances (0.3 CEUs), Handling and Storing Chemicals Safely (0.4 CEUs), Practical QC Principles for the Small Laboratory (0.5 CEUs), False Positives in the TB Lab (0.3 CEUs), Foodborne Illness: A Public Health Perspective (0.6 CEUs) and Chemical Terrorism Preparedness: The Basics (0.3 CEUs).

For more information, or to arrange to borrow a workshop, contact the Chicago office of the NLTN at 312-793-3306 or at mwoffice@nltn.org. For more training opportunities visit the NLTN library at www.nltn.org

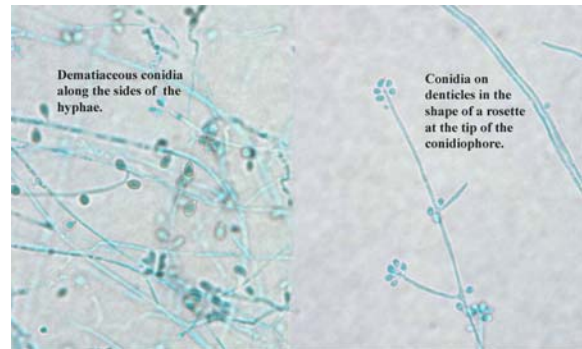
FUN FUNGI.....

Sporothrix schenckii

Sandy Arduin MT(ASCP) & Bruce Palma MT(ASCP) - Mycobacteriology/Mycology Unit

***Sporothrix schenckii* (*S. schenckii*)**, a dimorphic fungus, is the causative agent of human sporotrichosis. Infection typically occurs due to skin puncture by a thorn or splinter from infected plants such as sphagnum moss and beech stems. Soil has also been shown to be a major source of human infection. *S. schenckii* can also be disseminated by air, water and animals. Sporotrichosis can produce insidious, chronic infections in humans. It commonly causes localized cutaneous and regional lymph node lesions. Rarely, sporotrichosis will involve the respiratory system. Pulmonary infections are most likely caused by inhalation or aspiration of conidia in susceptible individuals. Dissemination of disease may occur in immunocompromised patients. When seen in tissue, organisms appear as multiple-budding yeast like cells; mycelial elements are rarely seen. An important histopathologic finding in tissue is the asteroid body, which is suggestive of *S. schenckii* but not specific for the organism. Asteroid bodies are typically found in the micro-abscesses of the dermis and are often found enclosed in giant cells. Asteroid bodies are composed of a central spore that is surrounded by eosinophilic material.

In the laboratory, *S. schenckii* grows slowly to moderately rapid. Colonies first appear white but become gray to black with time. Microscopically, hyphae are hyaline and septate with conidiophores little differentiated from vegetative hyphae. Conidia are hyaline, tear shaped to clavate, thin-walled and grouped in rosettes on denticles at the tips of the conidiophores. Ovoid brown conidia (aleurioconidia) on short denticles or attached directly to the sides of the hyphae are also seen in *S. schenckii*. Hyaline conidia in rosettes and dematiaceous aleurioconidia are diagnostic of *S. schenckii*. At 37EC on enriched media, *S. schenckii* produces ovoid to elongate yeast cells with one or more cigar shaped buds (they may look like rabbit ears). Other *Sporothrix* spp. may convert to a yeast phase at 37EC but they will not produce brown, thick-walled conidia on the sides of the hyphae. *Ophiostoma stenoceras* produces long necked perithecia (fruiting bodies) and may also produce an anamorph that looks like *S. schenckii*. It is important to note that this anamorph lacks the dark aleuriospores on the sides of the hyphae, thus differentiating it from *Sporothrix schenckii*.



Sporothrix schenckii



Last Issue=s Picture Quiz Answer:

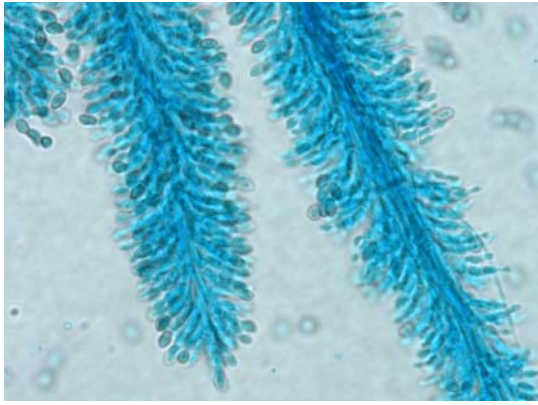
***Cephalotrichum* spp. 20X**

This picture is of *Cephalotrichum* spp. According to author McGinnis, *Cephalotrichum* is essentially a *Trichurus* without setae. Other authors such as Gams and Baron, refer to this organism as *Doratomyces*.

The colony was white and velvety. Microscopically, dematiaceous conidiophores formed a synnemata with a fertile spore bearing head. The head was elongate and feathery, comprised of a central axis of hyphae, which bore numerous annellophores. The annellophores were short and inflated and sometimes produced long chains of spores.

Michigan Antibigram Data and the NCCLS M39-A Document

Martha Boehme MT(ASCP)
Division of Infectious Diseases



***Cephalotrichum* spp. 100x**



This Issue=s Picture Quiz: What Mould is This?

This mould grows rapidly. The colony starts out white but develops brown to black pigment due to abundant sporulation. The conidiophores are typically hyaline (may be slightly pigmented), short and inflated. The conidia are black, unicellular, ovoid to ellipsoidal and oblate (slightly horizontally flattened). The conidia also have a thin, equatorial germ slit, which is easier to visualize when the colony is young.

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In the not-so-distant past, antibiotic resistance was solely the preoccupation of microbiologists, infection control, and infectious disease specialists. Now, even the mainstream media have reported stories about MRSA, "super bugs," and appropriate use of antibiotics in humans and animals. Awareness of the threat to our health posed by resistant bacteria is growing. Consequently so is the need to monitor rates and patterns of resistance among key organisms to determine whether efforts to control resistance are effective. Because establishing a regional or statewide picture of resistance is beyond the capability of any single laboratory, MDCH Bureau of Laboratories (BOL) initiated a project in 2002 to collect cumulative antibiograms on a voluntary basis and compile the data. Antibiograms from years 2000 and 2001 were analyzed to determine if data derived from documents compiled and published within most facilities could eliminate the need for laboratories to report additional statistics to MDCH.

NCCLS published the first-ever standardized procedure for compiling an antibiogram in 2002 in the M39-A document. The hospital data, compiled prior to the release of the NCCLS M39-A, not only highlighted many of the difficulties in comparing rates from non-standardized compilations, but also illustrated some of the problems faced by laboratories in the preparation of antibiograms. This provided a baseline by which to measure the impact of the NCCLS guideline. As more laboratories adopt the standardized NCCLS recommendations, the utility of this data to accurately reflect the level of resistance in Michigan will increase. As mentioned in previous issues of *LabLink* (Vol. 8, No. 4, Summer 2003), MDCH offers some simple Quality Assurance tools as well as an antibiogram review service that a growing number of microbiology laboratories utilize. In addition, a limited number of copies of NCCLS M39-A are available from MDCH BOL.

As part of the Sentinel Laboratory Preparedness Program response to the threat of emerging infectious diseases, including bioterrorism agents, all sentinel (Level A) clinical microbiology laboratories are asked to submit their yearly antibiogram. Strict confidentiality of

data is maintained and only aggregate data is utilized. For facilities that have not previously compiled an antibiogram, a Microsoft Excel™ antibiogram tool is available free of charge from Roche Pharmaceuticals. BOL also has a few copies available. If you are not certain whether you have submitted your antibiogram, still wish to order the NCCLS M39-A guideline, or obtain antibiogram software, please call Martha Boehme at 517-335-9654 or email boehmem@Michigan.gov. MDCH/BOL would like to extend a special thanks to the laboratories that participate in this project.

LabLink is published quarterly by the Michigan Department of Community Health, Bureau of Laboratories, to provide laboratory information to Michigan health professionals and the public health community.

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Margaret Casey Receives Pan American Society for Clinical Virology Travel Award

Hema Kapoor, M.D.
Virology Section

Margaret Casey received a Travel Award sponsored by the Pan American Society for Clinical Virology (PASCV). The society provides travel grants to selected students, postdoctoral fellows and technologists who submit abstracts to the annual Clinical Virology Symposium. Abstracts are reviewed and winners selected by a committee consisting of the organizer of the clinical virology symposium and PASCV Officers. Casey was chosen based on the scientific quality of the abstract submitted for presentation as a poster, "Identification of Rhinovirus in SARS Surveillance Testing at a State Public Health Laboratory," M. Casey, H. Kapoor, F. P. Downes, D. Wilkinson and P.A. Clark, Michigan Department of Community Health, Lansing, Michigan. The laboratory work was done in the MDCH virology section in collaboration with the molecular biology section as part of the 2003 SARS surveillance. Casey received a check for \$600 at the PASCV business meeting and was recognized at the banquet. This award supported her travel to the organization's annual meeting held in Tampa Florida from April 25-28, 2004. Congratulations on a job well done.